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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/530,057	04/04/2005	Hiroyuki Sugihara	268537US3X PCT	6265
22850	7590	11/28/2008		
OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			EXAMINER FORD, JOHN K	
			ART UNIT 3744	PAPER NUMBER
			NOTIFICATION DATE 11/28/2008	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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### Office Action Summary

**Application No.**

10/530,057

**Applicant(s)**

SUGIHARA ET AL.

**Examiner**

John K. Ford

**Art Unit**

3744

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 August 2008 and 12 September 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 11, 14, 15, 17, 18 and 24 is/are pending in the application.
- 4a) Of the above claim(s) 14 and 18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 11, 15, 17 and 24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 August 2008 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-949)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

Applicant's response of August 14, 2008 has been carefully considered. The new drawing Figure 8A has been received and is not approved. It contains new matter as explained below.

The drawings are objected to because newly proposed Figure 8A contains new matter. The portion of the drawing where element 19 projects into element 5 by using at least part of the side wall of element 5 to form bypass member 17 is deemed to be new matter unsupported by the original disclosure. If applicant disagrees applicant must point out precisely where in the original specification, drawings and/or claims the aforementioned objected to subject matter is disclosed.

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the subject matter of claims 15 and 17 (the positioning of channel 17 "within" the cooling water outlet 5 in elected Figure 8) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered. With regard to new matter, with regard to any drawing submitted applicant must explain how the original disclosure supports the new drawing, namely by explaining where in the original disclosure it is disclosed that channel 17 in elected Figure 8 is positioned in the water outlet 5 and how that is accomplished with the structure disclosed in Figure 8. While it is clear that the channel 16 in non-elected Figures 6 and 7 is positioned in the water outlet 5, it remains unclear that channel 17 is or how this is accomplished.

Do not introduce any new matter into the proposed drawing correction that cannot be supported by the original disclosure.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 17 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 17 depends from cancelled claim 13 and is therefore indefinite. For purposes of rejection below it is assumed to depend somewhat redundantly (like claim 15) from claim 11.

Claims 11, 15 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Moser et al (USP 3,735,811).

See Figures 6-8. A heat exchanger is shown with a shell 2 and a plurality of tubes 4 (legend omitted from Figures 6-8). An inlet 5 and outlet 6 at opposite ends of the shell are shown. A "cover" (legend omitted from Figures 6-8) corresponding to applicant's claimed "guide" is shown in Figure 6 attached to each end of the tubes 4 for feeding another fluid into and through the tubes 4. A bypass flow path 11 is defined above the horizontal plate (above the topmost row of tubes in Figure 7) and the interior of the upper portion of the shell 2. The portion of the bypass flow path furthest away from outlet 6 is opposite the inlet 5. The claimed bypass "flow conduit" defining the bypass flow path 11 is delimited by the upper side of the horizontal plate (above the topmost row of tubes in Figure 7) and the interior facing side of the upper portion of the shell 2. Regarding claims 15 and 17, by virtue of the fact that the horizontal plate

(above the topmost row of tubes in Figure 7) runs the entire length of the tubes as shown in Figure 8, the bypass "flow path" crosses the entirety of the outlet 6 and is therefore deemed to be "within" the cooling water outlet. After all a "flow path" is not a piece of structure.

Regarding applicant's remarks in favor of patentability, any fluid that passes from inlet 5 vertically up to collecting space 11 in Figure 6 of Moser (and some of the fluid will inherently do this since there is no structure to prevent that flow) must then flow horizontally within collecting space 11 (i.e. perpendicular to the flow through inlet 5) to exit at outlet 6. Therefore contrary to counsel's contention, Moser does disclose a piece of structure to guide the fluid to a direction perpendicular to the flow of the cooling water through the inlet.

Claims 11, 15, 17 and 24 are under 35 U.S.C. 103(a) as being unpatentable over the combined teachings of Moser et al (USP 3,735,811) and applicant's conceded PRIOR ART described on page 1, (13 lines from the bottom)-page 6, line 2 of the specification.

See Figures 6-8. A heat exchanger is shown with a shell 2 and a plurality of tubes 4 (legend omitted from Figures 6-8). An inlet 5 and outlet 6 at opposite ends of the shell are shown. A "cover" (legend omitted from Figures 6-8) corresponding to applicant's claimed "guide" is shown in Figure 6 attached to each end of the tubes 4 for

feeding another fluid into and through the tubes 4. A bypass flow path 11 is defined above the horizontal plate (above the topmost row of tubes in Figure 7) and the interior of the upper portion of the shell 2. The portion of the bypass flow path furthest away from outlet 6 is opposite the inlet 5. The claimed bypass "flow conduit" defining the bypass flow path 11 is delimited by the upper side of the horizontal plate (above the topmost row of tubes in Figure 7) and the interior facing side of the upper portion of the shell 2. Regarding claims 15 and 17, by virtue of the fact that the horizontal plate (above the topmost row of tubes in Figure 7) runs the entire length of the tubes as shown in Figure 8, the bypass "flow path" crosses the entirety of the outlet 6 and is therefore deemed to be "within" the cooling water outlet. After all a "flow path" is not a piece of structure.

To have connected the shell inlet 5 and outlet 6 of Moser to a source of cooling water and one of the "covers" (applicant's claimed "guide") at each end of the tubes of Moser to a diesel engine would have been obvious to one of ordinary skill in the art to advantageously improve the efficiency of the heat exchange with the exhaust gas by improving the distribution of the shell-side flow avoiding any stagnation areas within the shell as taught by Moser. Applicant's prior art explicitly teaches that it is known to use shell and tube heat exchangers (such as shown by Moser) to cool hot exhaust gas from a diesel engine using cooling water from the engine.

Regarding applicant's remarks in favor of patentability, any fluid that passes from inlet 5 vertically up to collecting space 11 in Figure 6 of Moser (and some of the fluid will inherently do this since there is no structure to prevent that flow) must then flow horizontally within collecting space 11 (i.e. perpendicular to the flow through inlet 5) to exit at outlet 6. Therefore contrary to counsel's contention, Moser does disclose a piece of structure to guide the fluid to a direction perpendicular to the flow of the cooling water through the inlet.

Claims 11, 15 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Momile (USP 2,322,047).

A shell is formed by elements 11, 12, and 47. Tubes are shown in areas 18, 19 and 20. An inlet capable of admitting cooling water is shown at 28. An outlet capable of discharging cooling water is shown at 13. A guide is shown at 41 or 40 in Figure 5. The bypass path formed by pipe 22, 50, 57 and 71. The flow of fluid in pipe 22 is perpendicular to the flow of fluid through inlet 28.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John K. Ford whose telephone number is 571-272-4911. The examiner can normally be reached on Mon.-Fri. 9-5:30.



If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cheryl Tyler can be reached on 571-272-4834. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/John K. Ford/  
Primary Examiner, Art Unit 3744